

1           1.    A bond pad assembly comprising:  
2               a bond pad;  
3               a trace coupled to said pad and extending away  
4 from said pad in a first direction; and  
5               a trace stub coupled to said pad and extending  
6 away from said pad in a direction other than said first  
7 direction.

1           2.    The assembly of claim 1 wherein said stub extends  
2 diametrically away from said trace.

1           3.    The assembly of claim 1 wherein said bond pad is  
2 a non-solder mask defined pad.

1           4.    The assembly of claim 1 wherein said stub has a  
2 thickness and width substantially equal to the thickness  
3 and width of said trace.

1           5.    The assembly of claim 1 including a solder mask  
2 which defines a solder receiving area proximate to said  
3 bond pad.

1           6.    The assembly of claim 5 wherein said stub extends  
2 outwardly into said solder mask.

1           7.    The assembly of claim 1 including a set of three  
2 stubs each oriented 90° away from one of the other of said  
3 stubs, one of said stubs being diametrically opposed to  
4 said trace.

1           8.    The assembly of claim 1 wherein said bond pad  
2 includes a tear-drop shaped portion coupling said bond pad  
3 to said trace, said stub also being tear-drop shaped.

1           9.    The assembly of ~~claim 1~~ wherein said bond pad is  
2 adapted to receive a solder ball.

1           10.   A bonding system comprising:  
2               a bond pad;  
3               a trace coupled to said bond pad and extending  
4 away from said pad; and  
5               an element adapted to counteract the attractive  
6 forces applied by the trace to solder placed on the bond  
7 pad.

1           11.   The system of claim 10 wherein said element  
2 includes a trace-like portion extending away from said bond  
3 pad in a direction opposite to the direction that said  
4 trace extends away from said bond pad.

1           12. The system of claim 11 wherein said trace-like  
2 element has the width and thickness of said trace.

1           13. The system of claim 10 wherein said bond pad is  
2 coupled to said trace by a tear-drop shaped portion, said  
3 element including a tear-drop shaped portion.

1           14. The system of claim 10 including a solder mask  
2 defining a solder mask opening around said bond pad, said  
3 element extending from said bond pad and through said  
4 opening.

1           15. The system of claim 10 including a solder mask  
2 and an opening defined in said solder mask surrounding said  
3 bond pad wherein said element does not extend across said  
4 solder mask opening.

1           16. The system of claim 10 wherein the attractive  
2 forces applied to said solder ball arise from the  
3 configuration of said trace, said element adapted to  
4 emulate said trace.

1           17. The system of claim 10 including a solder mask  
2 surrounding said bond pad, the attractive force on said  
3 solder being the result of the effects of the edge of said

4 solder mask, said solder mask edge being arranged to create  
5 a counteractive force on said solder.

1 18. The system of claim 17 wherein said solder mask  
2 includes a plurality of symmetrically disposed lobes.

1 19. The system of claim 10 wherein said element is  
2 configured symmetrically to said trace.

1 20. The system of claim 10 further including a device  
2 adapted to center the solder against forces which act  
3 transversely to the length of said trace.

1 21. The system of claim 20 including a stub trace  
2 which extends away from said bond pad in opposition to said  
3 trace and a pair of stub traces oriented at 90° to said  
4 trace and coupled to said bond pad.

1 22. A method of positioning solder on bond pads  
2 coupled to traces, said bond pads being surrounded by  
3 solder mask material, said method comprising:

4 depositing solder on a first bond pad having a  
5 trace extending in a first direction;

6 depositing solder on a second bond pad having a  
7 trace extending in a second direction, said first and  
8 second directions being different; and

9 causing said solder deposited on said first bond  
10 pad to move to a displaced position with respect to said  
11 first bond pad, such that said solder aligns with said  
12 solder deposited on said second bond pad.

1 23. The method of claim 22 including nesting said  
2 first bond pad with a trace coupled to said second bond  
3 pad, and nesting said second bond pad with a trace coupled  
4 to said first bond pad.

1 24. The method of claim 22 wherein causing includes  
2 wicking said solder towards a trace coupled to said first  
3 bond pad.

1 25. A method of forming solder connections in  
2 integrated circuits comprising:  
3 depositing solder on a bond pad;  
4 counteracting an attractive force supplied by a  
5 bond pad trace to the solder by providing a similar and  
6 opposite force on the solder.

1 26. The method of claim 25 wherein counteracting  
2 includes forming a trace-like portion which extends away  
3 from said bond pad in a direction opposite to the direction  
4 that the trace extends away from said bond pad.

1           27. The method of claim 26 wherein counteracting  
2 includes forming a solder mask around said bond pad and  
3 causing said trace-like element to extend outwardly from  
4 said bond pad into said solder mask.

1           28. The method of claim 25 wherein counteracting  
2 includes forming tear-drop shaped portions on two opposed  
3 sides of a bond pad.

1           29. The method of claim 25 further including  
2 providing elements which tend to cause said solder to  
3 center on said bond pad.

1           30. The method of claim 29 further including  
2 providing a set of three elements coupled to said bond pad  
3 and oriented at approximately 90° to an adjacent element.

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